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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/728,883	12/01/2000	Steven Paolini	M-9377 US	5707
32566	7590	03/05/2004	EXAMINER	
PATENT LAW GROUP LLP			AKKAPEDDI, PRASAD R	
2635 NORTH FIRST STREET			ART UNIT	
SUITE 223			PAPER NUMBER	
SAN JOSE, CA 95134			2871	

DATE MAILED: 03/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/728,883	PAOLINI ET AL.	
	Examiner	Art Unit	
	Prasad R Akkapeddi	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 December 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 and 6-22 is/are pending in the application.
- 4a) Of the above claim(s) 6-9 and 16-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 10-15 and 19-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
     a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                   | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) Paper No(s). <u>01/23/2004</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Review (PTO-948)                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                         |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. | 6) <input type="checkbox"/> Other: _____  |

***Election/Restrictions***

1. This application contains claims directed to the following patentably distinct species of the claimed invention:

A: claims 1-3, 10-15 and 19-22 drawn to a color liquid crystal display comprising a first light guide layer, a second light guide layer and a third light guide layer lying in a different plane according to Fig. 3.

B: claims 6-9 and 16-18 drawn to a color liquid crystal display wherein the first light guide, the second light guide and the third light guide comprising fiber optics cables arranged adjacent and parallel to each other according to Figs. 5-7.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, none of the claims is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims

are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

2. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

3. During a telephone conversation with Mr. Brian D. Ogonowsky on 01/23/2004 a provisional election was made without traverse to prosecute the invention of Species A, claims 1-3, 10-15 and 19-22. Affirmation of this election must be made by applicant in replying to this Office action. Claims 6-9 and 16-18 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected

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invention. The Examiner thanks Mr. Ogonoswky for the professional and courteous attitude during the telephone call.

## **DETAILED ACTION**

### ***Response to Amendment***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

a. Claims 1-3,15 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evanicky et al. (Evanicky) (U.S.Patent No. 6,243,068) and

Mori (U.S. Patent No. 6,288,700) and further in view of Wang et al. (Wang) (U.S. Patent No. 6,104,371).

As to claims 1-3, 15 and 21-22: Evanicky discloses a liquid crystal display (Fig. 2B) containing plurality of layers (112-128) including a liquid crystal layer (118) and backlights (132, 136).

Although Evanicky discloses a backlight having a red light source, a blue light source and corresponding light guides, Evanicky's light guides do not couple only red light or only blue light as recited in the instant claim.

Mori on the other hand in disclosing a light emitting flat panel that can be substituted for a backlight for a liquid crystal display (col. 5, lines 18-20), discloses a first light guide (2) for coupling a red light (4R), a second light guide (2) for coupling a green light (4G) and a third light guide (2) for coupling a blue light (4B). When this panel is used as a backlight for a liquid crystal display, as suggested by Mori (col. 5, lines 18-20), the first light guide, the second light guide and the third light guide can be positioned to illuminate the surface of the liquid crystal layers of Evanicky. Mori discloses that the light sources are red, green and blue LEDs and also discloses at least two light guides for each source (Fig. 2).

As to the newly recited limitation in claims 1 and 15: "the first light guide layer, the second light guide layer and the third light guide layer lying in a different plane", neither Evanicky nor Mori explicitly disclose the light guide layer being in a different plane.

However Wang in disclosing modular, high-intensity fiber optic backlight for color displays, discloses such an arrangement where the first guide layer conducting red light (810), a second light guide layer conducting green light (820) and the third light guide layer conducting blue light (830) are lying in different planes (Figs. 8-11) and (col. 10, lines 45-60 and col. 11, lines 18-19).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to insert the specific arrangement of the light guide layers as disclosed by Wang into the liquid crystal structure of Evanicky and Mori to provide a high-intensity, fiber optic backlight module for color displays that advantageously provides light of uniform increased brightness, while at the same time being low profile, low weight having low power consumption while efficiently dissipating generated heat (col. 4, lines 27-33).

6. Claims 12-14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evanicky in view of Mori.

As to claims 12-14, 20: Evanicky discloses a first polarizer (120), energizing array (119), a liquid crystal layer (118), a second polarizer (116), a TFT array (119). Evanicky discloses a color filter and does not teach that a color filter is not necessary.

Mori discloses that a color filter is not necessary (col.2, lines 54-55). The method performed by both Evanicky and Mori's devices is to display numerous mono-color or multi-color images.



Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to insert the specific arrangement as disclosed by Mori into the liquid crystal structure of Evanicky to achieve a thin display having very high brightness without the use of color filters that consumed low power and has low manufacturing costs (col. 2, lines 1-7).

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Evanicky, Mori and Wang as applied to claims 1 and 15 and further in view of Lowry (U.S. Patent No. 6,304,703).

Although Evanicky and Mori disclose a liquid crystal display with back light consisting of different colors from LED sources, light guides to transmit this colored light, neither Evanicky nor Mori explicitly disclose the use of lenses to focus the light outputting these light guides or that these light guides comprise fiber optic cables arranged adjacent and parallel to each other.

Lowry on the other hand, in disclosing a LED based fiber optics display apparatus, discloses the use of lens array (Col.4, line 22). Lowry also discloses that the fiber optics or other types of light guides (Col. 5, lines 28-29) are arranged adjacent and parallel to each other (Fig.4).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate lens array and the arrangement of the fiber optics light guides as disclosed by Lowry into the display device disclosed by Evanicky and Mori to enhance the brightness of the device

and to fabricate a small, lightweight device for use in military, outdoor sporting and trade show type events (col. 2, lines 20-30).

8. Claims 11 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evanicky, Mori and Wang as applied to claims 1 and 15 and further in view of publication JP-2000171796 assigned to Howan Bussan KK (Howan).

Evanicky and Mori do not disclose that the light guides are made out of transparent sheets. However, Howan in disclosing a backlight assembly for a LCD, discloses a sheet like light assembly for such displays. When one replaces these sheet like assemblies with the light guides disclosed by Evanicky and Mori, they can be overlaid as recited.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to insert sheet like assemblies as disclosed by Howan into the display disclosed by Evanicky and Mori to achieve uniform spreading and sufficient brightness in compact, light weight devices thus reducing quality variations during production (Abstract).

### ***Response to Arguments***

9. Applicant's arguments with respect to claims 1 and 15 have been considered but are moot in view of the new ground(s) of rejection.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prasad R Akkapeddi whose telephone number is 571-272-2285. The examiner can normally be reached on 7:00AM to 5:30PM M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0530.

PPA

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Prasad R Akkapeddi, Ph.D  
Examiner  
Art Unit 2871

TOANTON  
PRIMARY EXAMINER